

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An intelligent digital broadcast scheduling system, said scheduling system arbitrating the use of specified broadcast time slots, said broadcast comprising ~~one or more or a combination of~~ data content comprising including one or more of audio, video, text, graphics, images, or data, ~~said data content available across networks~~, said scheduling system comprising:
 - ~~a messaging protocol, said protocol comprising at least: priority indicators, service categories, and service classes;~~
 - an arbitrator, said arbitrator ~~intelligently determining a relative value of specified~~ determining relative levels of data content based upon priority indicators, service categories, and service classes of data content received from a plurality of entities from a group of requesting content providers;
 - a scheduler, said scheduler ~~collecting and~~ sequencing said data content for broadcast based on said arbitrator determinations of relative levels of data content;
 - and
 - an in-band on-channel (IBOC) ~~network~~ transmitter broadcasting said data content ~~as per said sequence~~ based upon said sequencing.
2. (Original) An intelligent digital broadcast scheduling system, as per claim 1, wherein said system comprises a hierarchy of gateways, one or more first level gateways arbitrating and scheduling a first data content level and one or more second level

gateways operatively connected to said first level gateway(s) and arbitrating and scheduling a second data content level.

3. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 2~~claim 1~~, wherein said one or more first level gateways arbitrating and scheduling a first data content level comprise at least a central gateway receiving requests from a the plurality of national/international content providers.
4. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 2~~claim 1~~, wherein said one or more second level gateways receive requests from a plurality of local content providers.
5. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 1, wherein said data content is arbitrated based on a plurality of the following parameters: data-content type, transmission requirements, data type, time, end user device requirements.
6. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 1, wherein said data content is prioritized, based on said priority indicators, as one of the following: extreme high priority for immediate data transmission, high priority for transmission at earliest opportunity, normal according to requested repetition rate, and ~~background/low~~ low for transmission in slots left free after transmission of messages of extreme high priority, high priority, and normal priority.

7. (Original) An intelligent digital broadcast scheduling system, as per claim 1, wherein said priority indicators comprise one or more of the following fields: level of service, bit rate requirements, latency grades, or best effort required.
8. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 1, wherein said ~~protocol includes message fields comprising~~ arbitrator determinations are further based upon a service operator code identifying said data content provider.
9. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 1, wherein said ~~protocol includes message fields comprising~~ arbitrator determinations are further based upon a destination address representing a broadcast, multicast, or unicast scenario.
10. (Original) An intelligent digital broadcast scheduling system, as per claim 1, wherein said service classes comprise at least basic, preferred, or premium.
11. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 1, wherein said service categories comprise at least one, or a combination of: administrative, maintenance, advertisement, news, ~~news (local, regional, national, international,~~ sports, weather, traffic, emergency alert, stocks, ~~stocks (local, national, regional, international),~~ entertainment, travel entities, medical, multimedia, audio, logo, or text.

12. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 1, wherein said ~~message protocol further includes~~ arbitrator determinations are further based upon language filtration identifiers.
13. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 1, wherein said ~~message protocol further includes~~ arbitrator determinations are further based upon periodicity requirements.
14. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 1, wherein said ~~message protocol further includes~~ arbitrator determinations are further based upon validity determinations including periods of validity.
15. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 1, wherein said ~~message protocol further includes~~ arbitrator determinations are further based upon time stamps of said ~~specified~~ data content.
16. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 14, wherein said ~~message protocol further includes~~ arbitrator determinations are further based upon periodicity requirements.
17. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 1, wherein said ~~message protocol further includes~~ arbitrator determinations are further based upon geographic classifications.

18. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 1, ~~wherein said message protocol further includes client display execution limitations~~ wherein said scheduler processes data for controlling display of information at a receiver.
19. (Currently Amended) An intelligent digital broadcast scheduling system, said scheduling system arbitrating the use of specified broadcast time slots, said broadcast comprising ~~one or more or a combination of data content comprising~~ including one or more of audio, video, text, graphics, images, or data, ~~said data content available across networks,~~ said scheduling system comprising:
- one or more gateways ~~arbitrating and scheduling first and second data content levels, said first and second data content levels received~~ receiving data content from a plurality of ~~operatively connected~~ data content providers;
 - a messaging protocol, ~~said messaging protocol used to identify parameters of said requests and comprising at least: priority indicators, service categories and service classes;~~
 - an arbitrator, said arbitrator ~~intelligently determining a relative value of specified~~ determining relative levels of data content based upon priority indicators, service categories and service classes of data content received from the plurality of entities from a group of requesting content providers;
 - a scheduler, said scheduler ~~collecting and~~ sequencing said data content for broadcast based on said arbitrator determinations of relative levels of data content, and

an in-band on-channel (IBOC) ~~network~~ transmitter broadcasting said data content as ~~per said sequence~~ based upon said sequencing.

20. (Original) An intelligent digital broadcast scheduling system, as per claim 19, wherein said system comprises a hierarchy of gateways, one or more first level gateways arbitrating and scheduling a first data content level and one or more second level gateways operatively connected to said first level gateway(s) and arbitrating and scheduling a second data content level.
21. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 20~~claim 19~~, wherein said one or more first level gateways arbitrating and scheduling a first data content level comprise at least a central gateway receiving requests from a plurality of ~~national/international~~ content providers.
22. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 20~~claim 19~~, wherein said one or more second level gateways receive requests from a plurality of local content providers.
23. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 19, wherein said data content is arbitrated based on a plurality of the following parameters: ~~data~~ content type, transmission requirements, data type, time, end user device requirements.

24. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 19, wherein said data content is prioritized, based on said priority indicators, as one of the following: extreme high priority for immediate data transmission, high priority for transmission at earliest opportunity, normal according to requested repetition rate, and ~~background/low~~ low for transmission in slots left free after transmission of messages of extreme high priority, high priority, and normal priority.
25. (Original) An intelligent digital broadcast scheduling system, as per claim 19, wherein said priority indicators comprise one or more of the following fields: level of service, bit rate requirements, latency grades, best effort required.
26. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 19, wherein said ~~protocol includes message fields comprising~~ arbitrator determinations are further based upon a service operator code identifying said data content provider.
27. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 19, wherein said ~~protocol includes message fields comprising~~ arbitrator determinations are further based upon a receiver destination address representing a broadcast, multicast or unicast scenario.
28. (Original) An intelligent digital broadcast scheduling system, as per claim 19, wherein said service classes comprise at least basic, preferred, or premium.

29. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 19, wherein said service categories comprise at least one, or a combination of: administrative, maintenance, advertisement, news, ~~news (local, regional, national, international)~~, sports, weather, traffic, emergency alert, stocks, ~~stocks (local, national, regional, international)~~, entertainment, travel entities, medical, multimedia, audio, logo, or text.
30. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 19, wherein said ~~message protocol further includes~~ arbitrator determinations are further based upon language filtration identifiers.
31. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 19, wherein said ~~message protocol further includes~~ arbitrator determinations are further based upon periodicity requirements.
32. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 19, wherein said ~~message protocol further includes~~ arbitrator determinations are further based upon validity determinations including periods of validity.
33. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 19, wherein said ~~message protocol further includes~~ arbitrator determinations are further based upon time stamps of said ~~specified~~ data content.

34. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 32, wherein said ~~message protocol further includes~~ arbitrator determinations are further based upon periodicity requirements.
35. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 19, wherein said ~~message protocol further includes~~ arbitrator determinations are further based upon geographic classifications.
36. (Currently Amended) An intelligent digital broadcast scheduling system, as per claim 19, ~~wherein said message protocol further includes client display execution limitations~~ wherein said scheduler processes data for controlling display of information at a receiver.
37. (Currently Amended) A method for intelligently scheduling digital broadcast data content, comprising the steps of:
- determining ~~a relative value of specified~~ relative levels of data content based upon priority indicators, service categories, and service classes of a messaging protocol for said data content;
 - ~~collecting and sequencing said data content for broadcast based on said relative value generated in said determining step~~ upon said determining of relative levels of data content; and
 - communicating said data content ~~over to~~ an in-band on-channel (IBOC) network as per the sequence of said scheduling step in accordance with said sequencing.

38. (Currently Amended) A digital broadcast scheduling system, comprising:

a computer ~~processor~~ processing system; and

a memory, wherein the computer ~~processor~~ processing system is configured to execute the steps of:

determining ~~a relative value of specified~~ relative levels of data content based upon priority indicators, service categories, and service classes of ~~a messaging protocol for~~ said data content;

~~collecting and~~ sequencing said data content for broadcast based ~~on said relative value generated in said determining step~~ upon said determining of relative levels of data content; and

communicating said data content ~~over to~~ an in-band on-channel (IBOC) network as per the sequence of said scheduling step in accordance with said sequencing.

39. (New) A computer readable medium having embodied therein computer instructions adapted for scheduling digital broadcast data content, said instructions being adapted to cause a computer processing system to execute steps of:

determining relative levels of data content based upon priority indicators, service categories, and service classes of said data content;

~~collecting and~~ sequencing said data content for broadcast based upon said determining of relative levels of data content; and

communicating said data content to an in-band on-channel (IBOC) network in accordance with said sequencing..